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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,918	07/24/2006	Tetsuya Suzuki	06500/LH	8247

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EXAMINER	
WEISS, HOWARD	
ART UNIT	PAPER NUMBER
2814	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,918	SUZUKI ET AL.	
	Examiner	Art Unit	
	HOWARD WEISS	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,7 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Attorney's Docket Number: 10/586,918

Filing Date: 7/24/2006

Continuing Data: 371 of PCT/JP06/00550 (1/17/2006)

Claimed Foreign Priority Date: 1/17/2005 (JPX)

Applicant(s): Suzuki et al. (Yohidaya, Murakami)

Examiner: Howard Weiss

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi (JP 05-175598) and Umeo (JP 57-109387).

Yagi shows most aspects of the instant invention (e.g. Figures 1 and 2) including:

- an n-GaN substrate **1**, first clad layer **4**, active layer **5**, second clad layer **6**, contact layer **10** and first **11** and second **12** electrodes
- said active layer comprising a plurality of barrier layers **5a** between which a plurality of quantum wells **5b** reside made of $In_{xa}Ga_{(1-xa)}As$ with $0.05 \leq xa \leq 0.20$,

each well of approximately identical thickness between 2.5 to 5 nm approximately (e.g. 3 nm; see Paragraph [0012] of PAJ machine translation) and at least one well is strained

- center wavelengths of the device between approximately 800 to 850 nm (Paragraph [0020] ibid)

Yagi does not show at least one well layer having a bandgap wavelength different from the other wells. Umeo teaches to form at least one well with a different bandgap wavelength different from the other wells to produce lights of different wavelengths (see Purpose). It would have been obvious to a person of ordinary skill in the art at the time of invention to form at least one well with a different bandgap wavelength different from the other wells as taught by Umeo in the device and process of Yagi to produce lights of different wavelengths.

In reference to the claim language pertaining to the characteristic lattice distortion and other claimed characteristics, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best, 195 USPQ 430, 433 (CCPA 1977) and In re Swinehart, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971)*; please see MPEP § 2112. Since Yagi and Umeo show all the features of the claimed invention, the characteristic lattice distortion and other claimed characteristics are an inherent property of Yagi and Umeo's invention.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi and Umeo, as applied to Claim 1 above, and further in view of Liang et al. (U.S. Patent No. 6,593,602).

Yagi and Umeo show most aspects of the instant invention (Paragraph 2) except for the SLD further comprising an etching block layer, a contact layer, an insulating layer, a ridge portion severing a gain region in a trapezoidal shape and an

absorption region and antireflection film . Liang et al. teach (e.g. Figures 1 and 2) to form a SLD comprising an etching block layer **8**, a contact layer **10a**, an insulating layer **11**, a ridge portion **9a** severing a gain region and an absorption region which absorbs light via an antireflection film **31** to obtain a relatively large light output without lowering the luminescent efficiency (Column 1 Lines 46 to 49). It would have been obvious to a person of ordinary skill in the art at the time of invention to form a SLD comprising an etching block layer, a contact layer, an insulating layer, a ridge portion severing a gain region and an absorption region which absorbs light via an antireflection film as taught by Liang et al. in the device of Yagi and Umeo to obtain a relatively large light output without lowering the luminescent efficiency.

Response to Arguments

4. Applicant's arguments filed 5/26/2009 have been fully considered but they are not persuasive. In reference to the invention being a SLD with characteristic broad optical spectral luminescence and specific spectral half bandwidths, an intended use clause found in the preamble of an apparatus claim is not afforded the effect of a distinguishing limitation unless the body of the claim sets forth structure which refers back to, is defined by, or otherwise draws life and breadth form the preamble. *In re Casey, 152 USPQ 235 (CCPA1967); Kropa v. Robie, 88 USPQ 478 (CCPA 1951)*. Thus, a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie, supra at 480 and Ex parte Mott, 190 USPQ 311, 313 (PTO Bd. Of App. 1975)*. In this case, the structure of the claimed invention after the preamble is not dependent for completeness upon the type of device (SLD or laser diode) stated in the preamble. Further, It is well know in the art that SLDs are laser diodes without a resonance mode.

In reference to the rejection not addressing the problem confronted by the claimed invention, the mere fact that the references relied upon by the Examiner to evince an

appreciation of the problem identified and solved by the instant invention is not, standing alone, conclusive evidence of the non-obviousness of the claimed subject matter. The references may suggest doing what an applicant has done even though those of ordinary skill in the art were ignorant of the existence of the problem. *In re Gershon, 152 USPQ 602 (CCPA 1967).*

In reference to the composition ratio of indium in the well layers, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corporation of America v. Banner , 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985*); See MPEP 2144.05. In this case Yagi's 0.03 is close enough to the clamed range to have expected the same properties. Yagi further states (Paragraph **[0020]**) that other output wavelengths can be achieved by varying the composition ratio or the thickness of the well layers. The main difference given in Yagi between the well and barrier layers is the thickness and the composition ration being 0.3 or greater for the barrier layers. It has been held that a prima facie case of obviousness exists where the general conditions of a claim are disclosed in the prior art and discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller, 105 USPQ 233*.

Additionally, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of invention. See Supreme Court Decision in *KSR International Co. v. Teleflex Inc., 550 U.S. --, 82 USPQ2d 1385 (2007).* In view of these reasons and those set forth in the present office action, the rejections of the stated claims stand.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

   A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via Howard.Weiss@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

9. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ E33.054; 372/45.012	Thru 8/11/2009
Other Documentation: none	
Electronic Database(s): EAST	Thru 8/11/2009

HW/hw
13 August 2009

/Howard Weiss/
Primary Examiner
Art Unit 2814